



Species of Concern

NOAA National Marine Fisheries Service

Atlantic sturgeon

Acipenser oxyrinchus oxyrinchus



Photo credit: University of Maine.

KEY INFORMATION

Area of Concern

Western Atlantic - Labrador, Canada through the St. Johns River, Florida.

Year Identified as "Species of Concern"

1988, formally retained in 1998.

Factors for Decline

- Fishing
- Bycatch
- Estuarine and freshwater habitat degradation
- Locks and dams

Conservation Designations

IUCN: Near Threatened

CITES: Appendix II

American Fisheries Society: Endangered in all stream systems except Conservation Dependent in Hudson, Delaware, and Altamaha rivers.

Current Status:

Demographic and Genetic Diversity Concerns:

The species is thought to have declined over time. There are only two Atlantic sturgeon subpopulations for which population size estimates are available - the Hudson and the Altamaha Rivers. For the Hudson River Peterson et al. (2000) estimate 4,600 wild-origin fish, assuming 0% mortality among stocked fish. The mean annual spawning stock size (spawning adults) was 870 (Kahnle et al. in press). The Altamaha River supports one of the healthiest Atlantic sturgeon populations in the Southeast, with over 2,000 subadults captured in trammel nets, 800 of which were nominally age-1 (as indicated by size). American shad gill net fishery monitoring data indicate the population is stable (NMFS, unpublished).

A number of studies have consistently found populations to be genetically diverse and indicate that, from the areas that have been sampled, there are between 7 and 10 populations that can be statistically differentiated (Waldman et al. 2002).

Existing Protections and Conservation Actions:

The Atlantic sturgeon is managed under a Fishery Management Plan implemented by the Atlantic States

Marine Fisheries Commission (ASMFC). In 1998, ASMFC instituted a coast-wide moratorium on the harvest of Atlantic sturgeon, which is to remain in effect until there are at least 20 protected year classes in each spawning stock (anticipated to take up to 40 or more years). NMFS followed this with a similar moratorium for Federal waters. Amendment 1 to ASMFC's Atlantic sturgeon Fishery Management Plan also includes measures for preservation of habitat, habitat restoration and improvement, bycatch monitoring, stock recovery, and breeding/stocking protocols. Accurate



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estimates of **bycatch** are needed to determine the size of this threat. A 2003 NMFS/USFWS workshop concluded that some populations were recovering while others were not. As a result, NMFS initiated a status review in 2005 to evaluate whether this species requires Endangered Species Act listing. The review is now available. Thus Atlantic sturgeon are considered a **candidate species**.

Brief Species Description:

The Atlantic sturgeon is a subtropical, **anadromous** species that attains lengths of up to 200 cm (79 inches) TL (Collette and Klein-MacPhee 2002). Historically, they were present in 38 rivers in the U.S. from St. Croix, ME to the Saint Johns River, FL, of which 35 rivers have been confirmed to have had a historical spawning population. They are currently present in 32 rivers, and spawning occurs in at least 23 (NMFS, unpublished). Atlantic sturgeon are bluish black or olive brown dorsally with paler sides and a white ventral surface. They can be distinguished from shortnose sturgeon by their larger size, small mouth, bony **scutes** between the anal fin base and the lateral scute row, a double row of scutes behind the dorsal fin, a double row of scutes before the anal fin, and a pale intestine. They may live up to 60 years (Mangin 1964, Stevenson and Secor 1999). There is faster growth and earlier maturation in southern populations, though not all data are consistent. For example, maturity is at 5 to 19 years of age in South Carolina (Smith et al. 1982), 11 to 21 in the Hudson River (Young et al. 1998), and 22 to 34 in the Saint Lawrence River (Scott and Crossman 1973).

Spawning adults migrate upriver in spring, beginning in February-March in the south and May-June in Canadian waters. In some areas, a small spawning run may also occur in the fall. Spawning occurs in flowing water between the salt front and **fall line** of large rivers. Atlantic sturgeon spawn every 1 to 5 years for males (Caron et al. 2002) and every 2 to 5 years for females (Stevenson and Secor 1999). Following spawning, males may remain in the river or lower estuary until fall; females typically exit the rivers within 4 to 6 weeks. Adults forage on benthic invertebrates (mussels, worms, shrimp), and reach weights of 800 pounds (363 kg). Juveniles move downstream into **brackish** waters for a few months; and at about 30 to 36 inches (76-92 cm) TL they move into coastal waters. Tagging data indicate that immature Atlantic sturgeon travel widely once they emigrate from their natal (birth) rivers.

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